



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,756	07/30/2004	Jack Xu	81098384 / FMC 1740 PUS	4755
28395 7590 01/11/2007 BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			EXAMINER SWENSON, BRIAN L	
			ART UNIT	PAPER NUMBER
			3618	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/710,756	Applicant(s) XU ET AL.	
	Examiner Brian Swenson	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-26 is/are allowed.
- 6) ☒ Claim(s) 1,9 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-8 and 10-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's arguments, see pages 4-5 of the amendment, filed 1 November 2006, with respect to the election of species have been fully considered and are persuasive.

The Requirement for Restriction has been withdrawn. An action on the merits of all pending claims 1-26 follows below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,233,508 issued to Deguchi et al.

Deguchi et al. teaches in Figures 1-13 and respective portions of the specification of a method for controlling a hybrid powertrain system for an automotive vehicle operated by a user (see block diagram shown in Figure 6), the system having an engine (2), an electric machine (4) that performs as a motor (Col. 2, line 58) in one mode of operation and performs as a generator (Col. 3, lines 5-7) in another mode of operation, a battery (15) connected to the electric machine (Figure 1), and a generator (1) configured to receive mechanical power from the engine and to present electrical power to at least one of the electric machine and the battery (Figure 1), and at least one

Art Unit: 3618

of the engine and the electric machine establish a power source for providing power to vehicle traction wheels (see Figure 1), the method comprising the steps of:

determining a first power state of the hybrid powertrain system (see Figure 9);

limiting electrical power generated by the generator (see Figure 9, generator amount is 10 kw) and the first power state, when the first power state is greater than zero (the accelerator depression amount is 30 km/h); and

limiting the electrical power generated by the generator to zero (see Figure 10), and limiting the power limit of the electric machine during generating to a first operating condition of the hybrid powertrain system (see Figure 10 where the Motor 1+4 is shown to be zero when the accelerator is released), when the first power state is less than or equal to zero (see Figure 10 when the accelerator is released), to provide over-charge protection to the battery.

Deguchi et al. discloses the claimed invention except for stating if the 10kw for the generator in Figure 10 is the minimum of the rated power limit for the generator. It would have been obvious to one having ordinary skill in the art at the time of invention to make the 10kw the minimum of the rated power limit for the generator. Operating the generator at the rated power limit would allow the generator to operate at an efficient level, an objective for the vehicle taught by Deguchi et al. in Col. 6, lines 21-22 and Col. 7, lines 49-53.

In regards to claim 17, Deguchi et al. shows in Figure 1 a series hybrid electric vehicle.

Allowable Subject Matter

Claims 18-26 allowed.

Claims 2-8 and 10-16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of allowable subject matter is the inclusion of: a control method for determining a first power state that includes the sum of actual mechanical power loss of an electric machine, the actual power loss of the electric machine, the actual total power consumed by the auxiliary loads and a charge limit for the battery; a control method for determining if the priority of the engine start is higher than drive performance; in combination with the elements recited, not found in the prior art of record.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,687,581 issued to Deguchi et al. teaches of a control device for a hybrid vehicle.

U.S. Patent No. 6,856,866 issued to Nakao teaches of an apparatus for controlling a hybrid vehicle. Nakao teaches of calculating the S.O.C. for a battery in Figure 2.

Art Unit: 3618

U.S. Patent No. 6,799,650 issued to Komiyama et al. teaches of warming up a vehicle's battery.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Swenson whose telephone number is (571) 272-6699. The examiner can normally be reached on M-F 9-5.

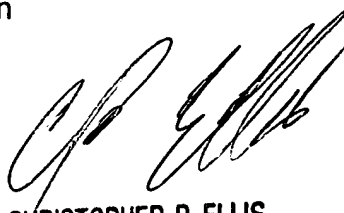
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BS 1/4/06

bls

Brian Swenson
Examiner
Art Unit 3618


CHRISTOPHER P. ELLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600